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FIGURE 1

CCTTCCCTCTGTAAAGATCMAACATTAACTTCAGTTAAATCAGTTAAATCAGTTAAATCAGTAATACTTCAGAAAGTAATACTAAAGAA  
 M H Y F C V L A A L S V F W I I A C L T R G K P L E N W K K 30  
 ATGCCATTATTTGGAGTATTAGCTGCACTGTCTGTTCAATTATCATTGCCCTGACAAAGGGCAAAGCTTGGAAAAGACTGGAAAG  
 L P V W E E S D A F F H D P G E V E H D T H F D F K S F L E 60  
 N H K T D L L R S L N L S R V P S Q V K T K E E P P Q F M I 90  
 ATACCAAGTTATGGAAGAGTCTGATGGCATTCCTTCATGATCCTGGAAAGTGAACCATGACACCACACTTGAECTTAAATCTTGGAG  
 D L Y N R Y T A D K S S I P A S N I V R S F S T E D V V S L 120  
 GATTATAACAGATATAACGGGACAAAGTCATCCCTCCATCCCTGCATCGTGAGGAGCTTCAGGCACTGAAGATGTTGTTCTTTA  
 I S P E E H S F Q K H I L L F N I S I P R Y E E V T R A E L 150  
 ATTTCACCAAGAGAACACTCAATTTCAGAAACACATCTCTTCAACATCTCTATCCACCGATATGAGGAAAGTCACCAAGAGCTGAAC  
 R I F I S C H K E V G S P S R L E G N M V I Y D V L D G D H 180  
 AGAATCTTATCTCCTGTCACAAAGGAAGTGGCTCCAGACTGGCAACATGGTCATTATGATGTTGAGGTCTAGATGGAGGACCAT  
 W E N K E S T K S L L V S H S I Q D C G W E M F E V S S A V 210  
 TGGGAAACAAAGAAAGTACCAAATCTTACTTGTCTCACAGTATTCAAGGACTGTGGACTGTTGAGGTGTCAGGGCTGTG  
 K R W V K A D K M K T K N K L E V V I E S K D L S G F P C G 240  
 AAAGATGGTCAGGGCAAGACAAAGACTAAACAAAGCTAGAGGTGTGTTATAGAGGATAAGGATCTGAGTGGTTCTGTGGG

**FIGURE 1 (CONTINUED)**

FIGURE 2A

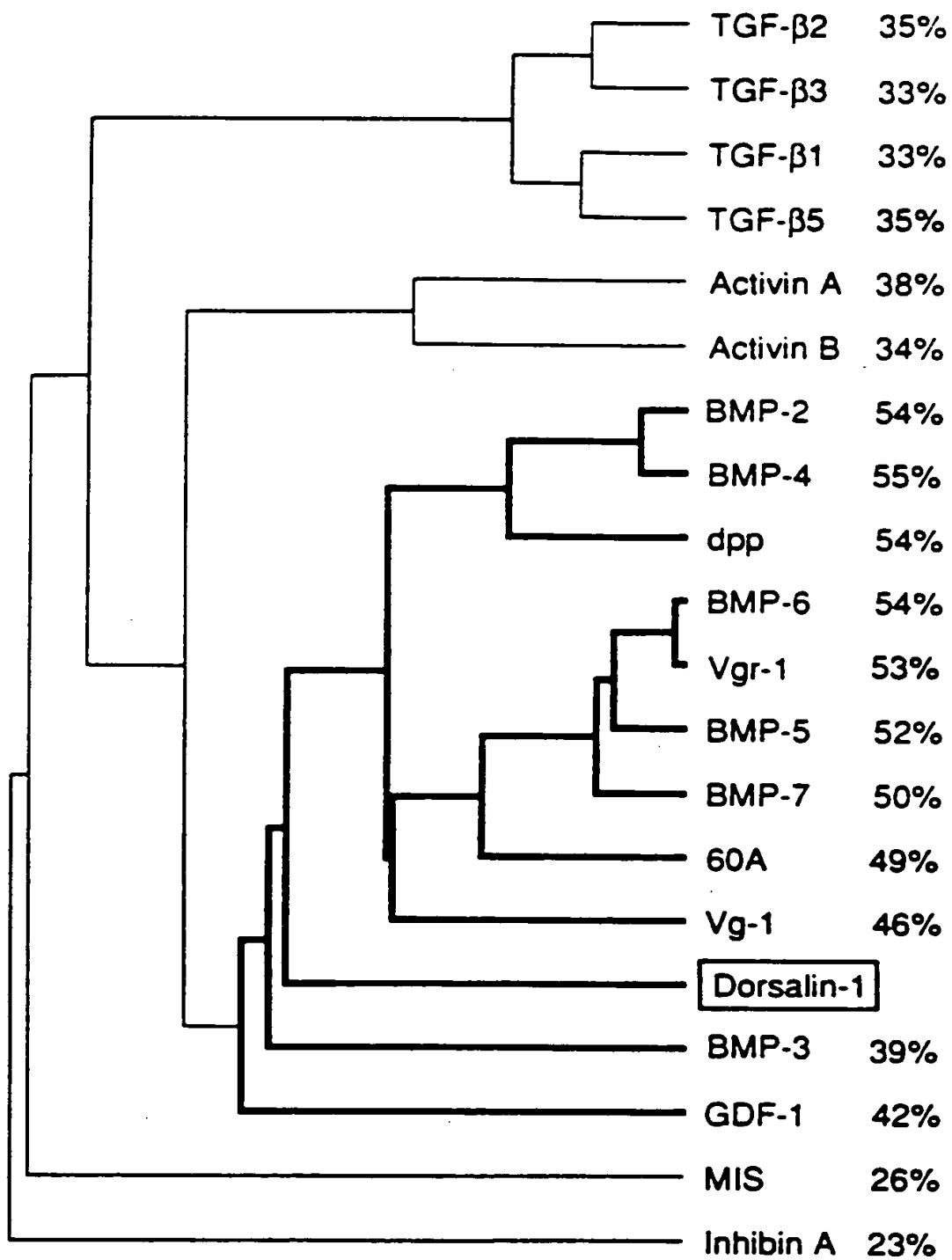
DORSALIN-1	... SVLNKLGKNDSSSSEEQREEKIAIRPRQHSSRSKRA^SIGANHCCRRTSLHVNFEKEIGWDSWIAPKDYEAFFECKGGCF	[427]
BMP-2	... EHYSWSQIRPLLVTFGHDKGKPHPLHKREKRAQAKHQQRKRLKSSGKRPYVDF-SDVYGWNDWIVAPPLGYDAYCHGKCP	[396]
DPP	... DDGRRHKARSIRADVSGGEGGGKGGGRNKRARRPTRRKNNHDGTGRRHSLYVD-SDVYGWDDWIVAPLGYDANYCDS	[588]
BMP-6	... RTTR^SASSRRQQSRNRSTASQDVARYSSASDYNSSSELKTAGRKHELYVSF-QDLYGWADWIVAPKGYDANYCYGECP	[514]
VG-1	... ECKDIQTFLYTSLLTVTLNPLRCKPDRKRSYSKLPFTASNICKKRHLYVEF-KDLYGWAQNWIVAPQGYMANYCCEGECP	[360]
ACTIVIN-A	... GADDEEKEQSHRPFLMLQARQSEDHPHRRRR^AGLECDGKWNICKKQFFVSE-XDLYGWNWDWIVAPLGSYHANYCEGECP	[427]
TGF-BETA-1	... GMNRPFLLLMATPLERAQHLQSSRHRR^ALDTNYCFSSTEKNCCVRQLYIDFRKDLYGWK-WIHEPKGYHANFCGP	[390]

\*

DORSALIN-1	... FPLTDNVTPKXHAIVQTLVHLQ----NPKKASKACCVPTKLDAISILYKDDAGYPTLIYNEGMKVAECCGR	[427]
BMP-2	... FPLADHLSINHAIVQTLVNSV----N-SKIPKACCVPTELSAISMLYDENEKVVLK-NYQDMVVEGGCR	[396]
DPP	... FPLADHFSSINHAIVQTLVHNW----NGKVKACCVPTQLDSVAMLYNDQASTVVLK-NYQEMTVVGGCR	[588]
BMP-6	... FPLWAHM^S^INHAIVQTLVHLH----NPEYVPKPCCAOPTKLNAISVLYFDNSMVIK-KYRNMAVDECCGR	[514]
VG-1	... YPLTEIINGSNHAIIQTLVHSI----EPEDIPLPCCVPTKNSPISMLFYDNNNDNVVCR-HYENMAVDECCGR	[360]
ACTIVIN-A	... SHIAGTSGSSLSFHSTVINVHYMRRGHSPFANLKSVCVPTKLRRPMISMLYYDDGQNIIKK-DIQNMIVEEGCCS	[427]
TGF-BETA-1	... YIWSLDTqYSKVLALY-NQHNPGASAAPCCVPQALEPLPIVY-VGRKPKVE-QLSNMIVRSCKCS	[390]

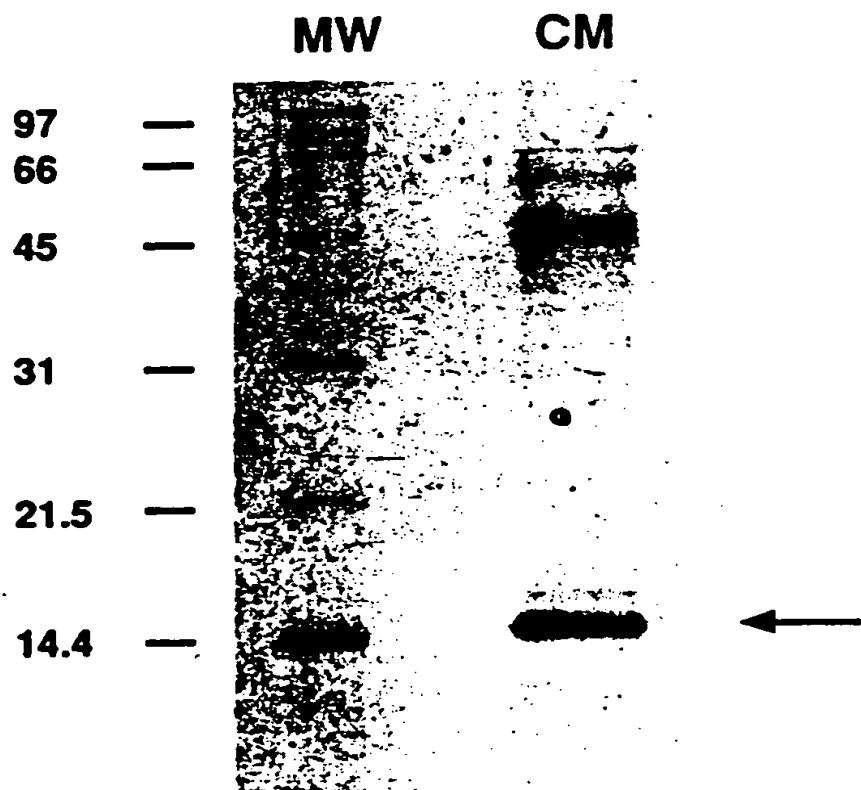
\*

## **FIGURE 2B**



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FIGURE 3A



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FIGURE 3B

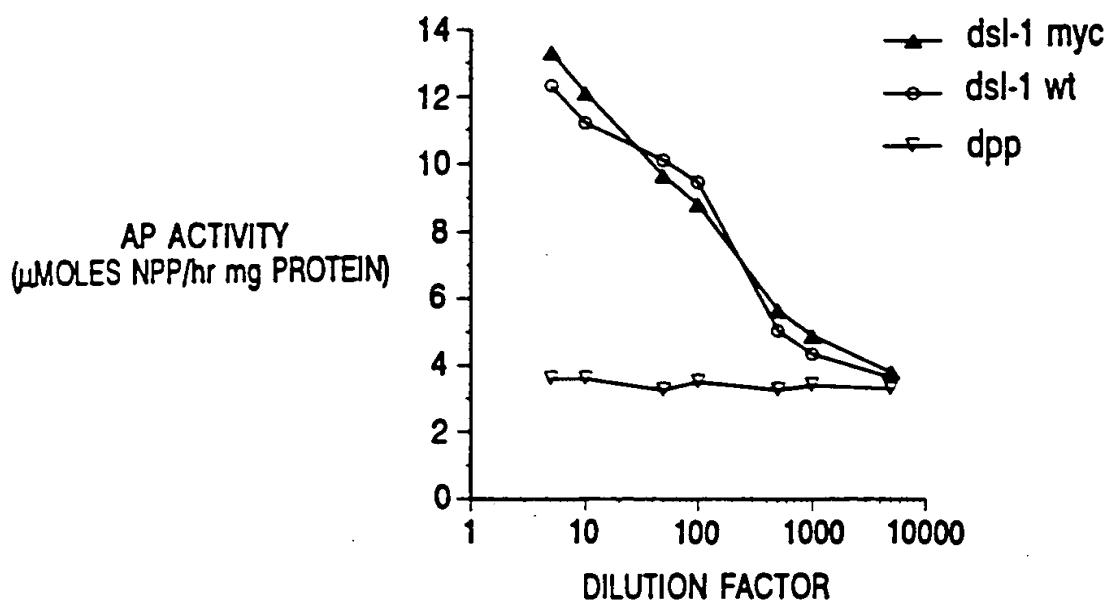


FIGURE 4A FIGURE 4B FIGURE 4C FIGURE 4D

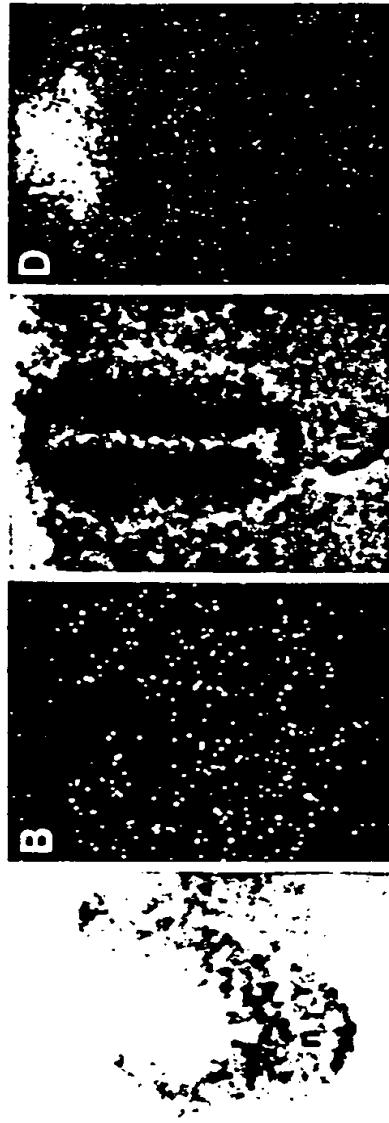


FIGURE 4E FIGURE 4F FIGURE 4G FIGURE 4H

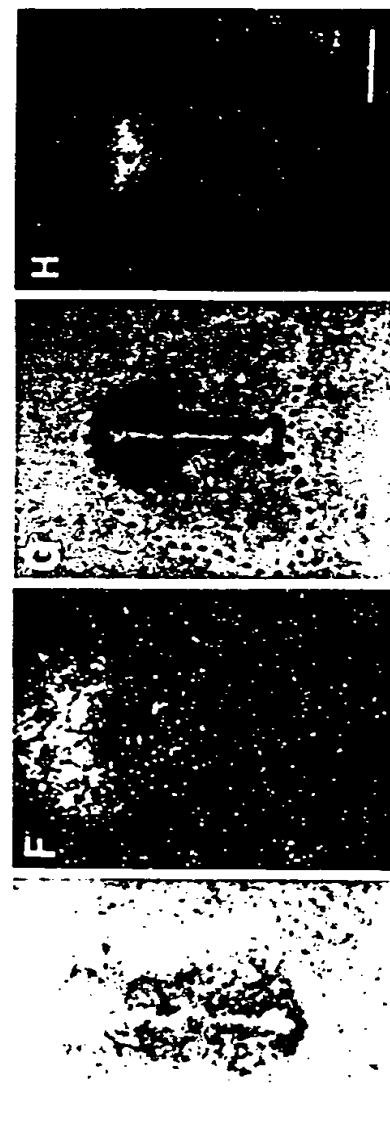


FIGURE 5A



FIGURE 5B



FIGURE 5C

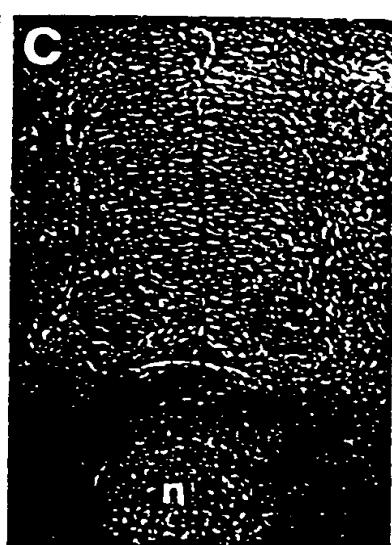


FIGURE 5D



FIGURE 5E

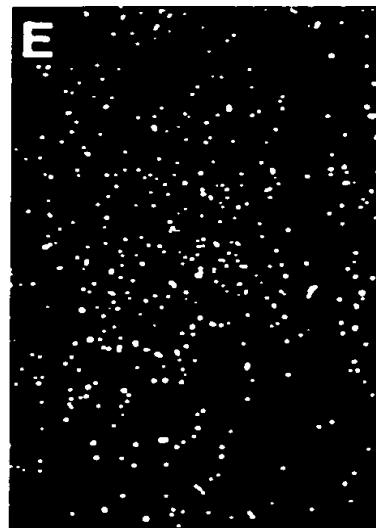


FIGURE 5F

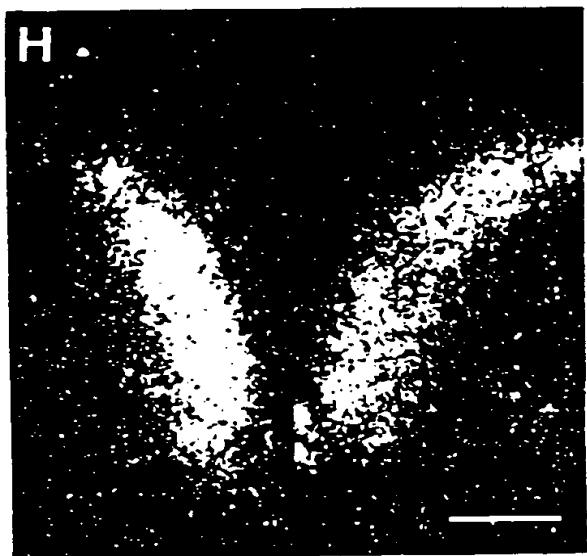


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**FIGURE 5G**



**FIGURE 5H**



4000226 440304

"GO 2290 T T" a "GO 2290 D D"

FIGURE 6A

FIGURE 6B

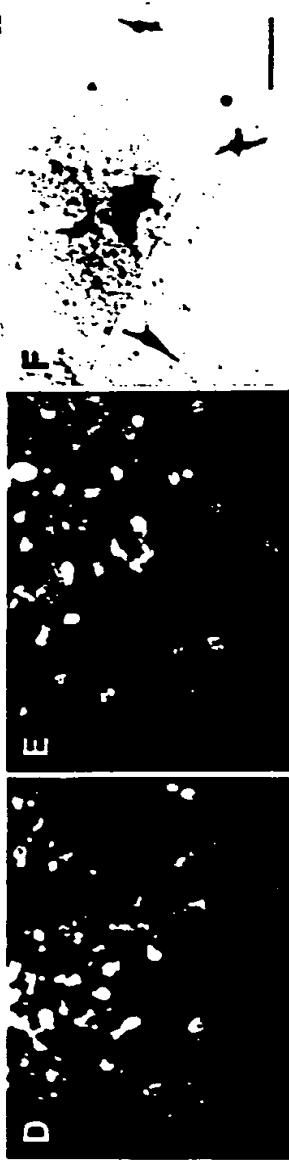
FIGURE 6C



FIGURE 6D

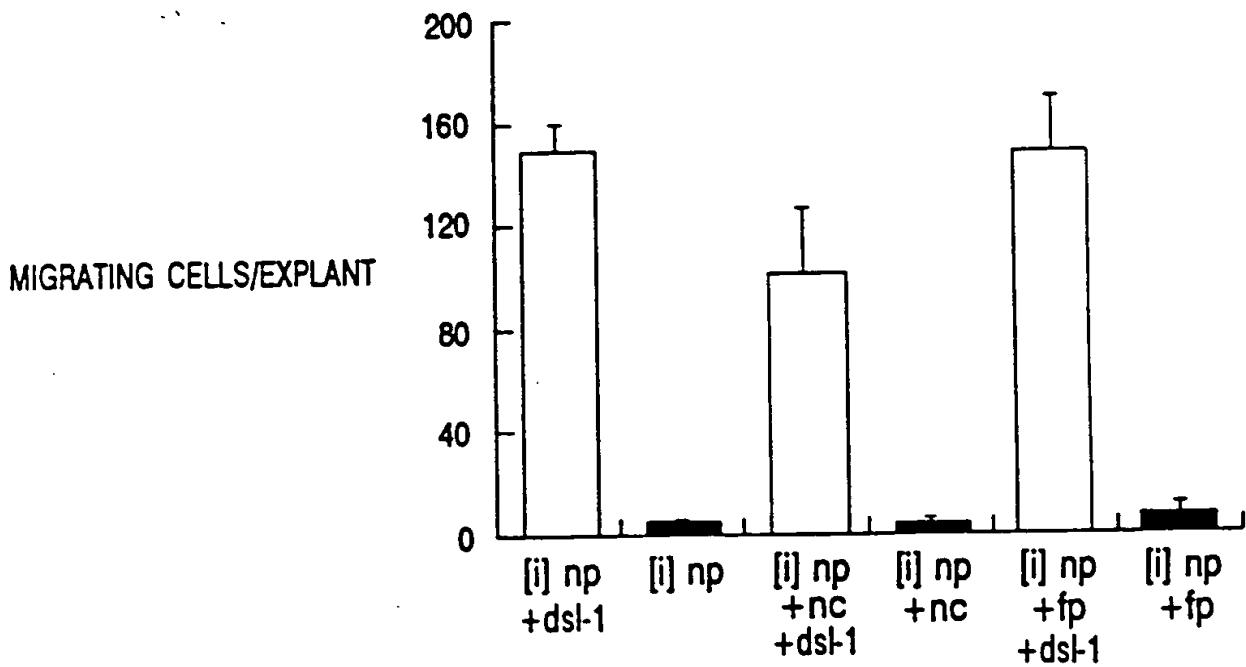
FIGURE 6E

FIGURE 6F



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FIGURE 6G



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FIGURE 7A



FIGURE 7B

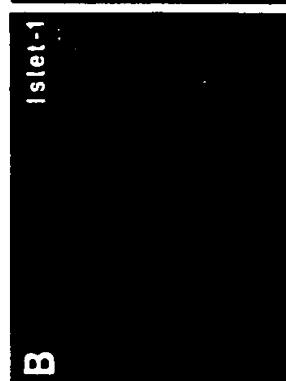


FIGURE 7C



FIGURE 7D



FIGURE 7E

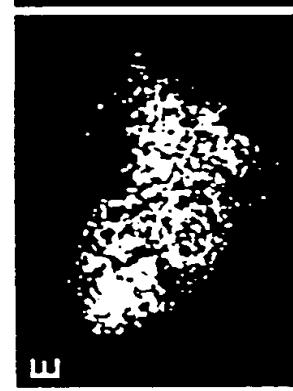


FIGURE 7F



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FIGURE 7G



FIGURE 7H

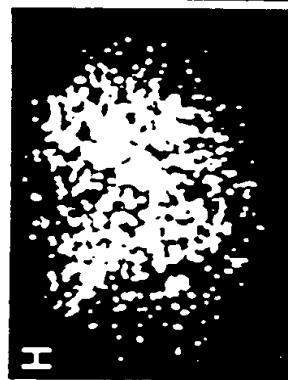


FIGURE 7I

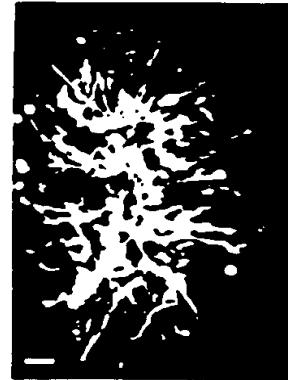


FIGURE 7J



FIGURE 7K

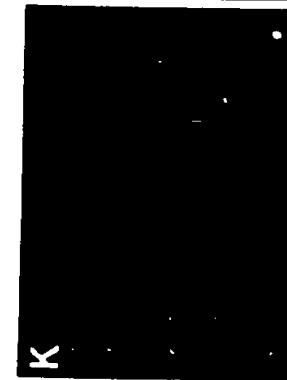
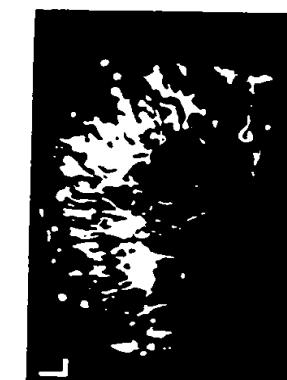


FIGURE 7L



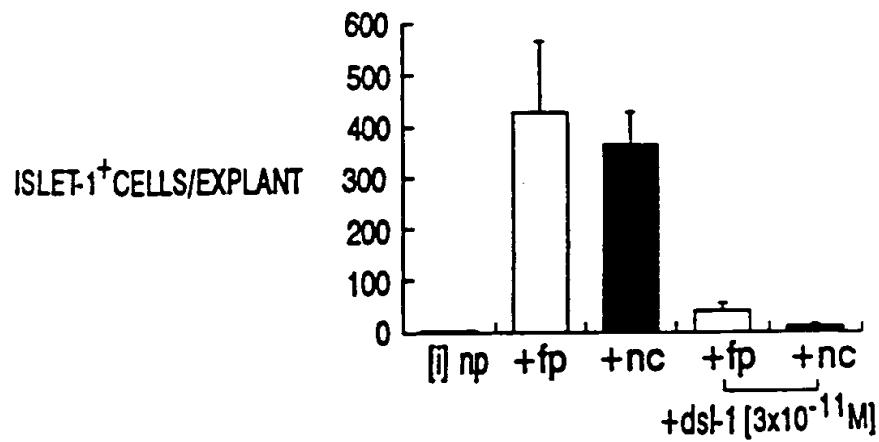


FIGURE 8B

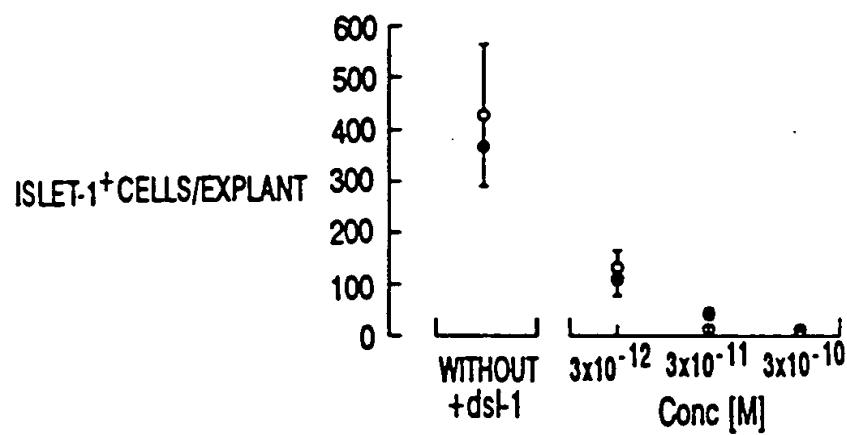
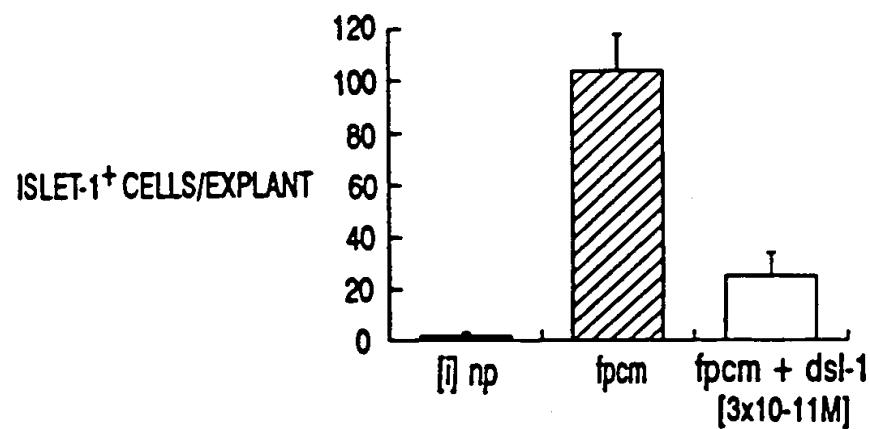
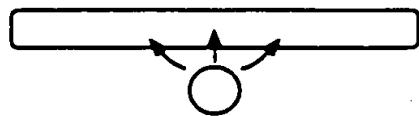


FIGURE 8C

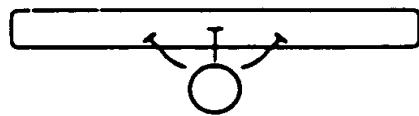


**FIGURE 9A****A. ESTABLISHMENT OF DORSALIN-1 EXPRESSION**

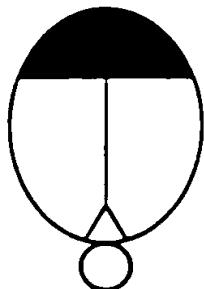
- i) SIGNALS FROM THE NOTOCHORD SPECIFY THE VENTRAL FATE OF OVERLYING NEURAL PLATE CELLS



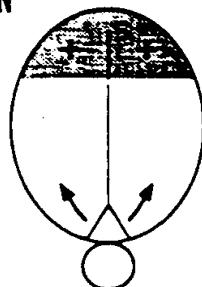
- ii) SIGNALS FROM THE NOTOCHORD ACT ON OVERLYING NEURAL PLATE CELLS TO PREVENT SUBSEQUENT DSL-1 EXPRESSION



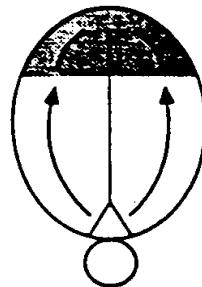
- iii) RESTRICTED DORSAL EXPRESSION OF DSL-1 OCCURS AFTER NEURAL TUBE CLOSURE

**FIGURE 9B****B. POSSIBLE FUNCTIONS OF DORSALIN-1**

- i) PROMOTION OF DORSAL CELL TYPE DIFFERENTIATION



- ii) LIMITING THE SPREAD OF VENTRAL SIGNALS



- iii) DIFFUSION OF DSL-1 CONTROLS CELL PATTERN MORE VENTRALLY

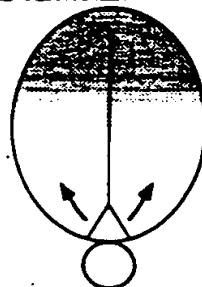


FIGURE 10

1            MHYFGVLAALSVFNIIACLTRGKP LENWKKLPVMEESDAFFHDPEVEHDTDFKSFLENIKTDLLRSINLSRVPSQVK  
B29        . . . . .  
B29m      . . . . .

80            . . . . .  
B29        TKEEPPQFMIDLYNRYTADKSSIPASNIYRSFSTEDVVSLISPEEHSFQKHILLFNISIPRYEEVTRAELRIFISCHKEV  
B29m      . . . . .

160            . . . . .  
B29        GSPSRLEGAMVIVDVL. DGDHWENKESTSLLVSHSIQDCGWMFEVSSAVKRUVKADKMKTKNKLEVVIIESKDLGFGFPC  
B29m      . . . . .

161            . . . . .  
B29        DVLEDSETMDQATGTKITFLVSQDIRDEGMETILEVSSAVKRUVRADSTTNKNUKLEVTVQSHRES...C  
B29m      . . . . .

240            . . . . .  
B29        GKLDITVTHDKNLPLLIIVFSNDRSNGTKETKVE. LREMIVHEQESVLNKLIGKNDSSSEEQREEEKAII...ARPRQHSSR  
B29m      DTLDISVPPGSKNNLPPFFFVFSNDRSNGTKETRLDLKEMIGHEQETMLVKTAKNAYQGAGESQEEEGLDGTYAVGPLLLAR

320            . . . . .  
B29        SKRSIGA.NHCRRTSLHVNFKEIGWDSWIIAPKDXEAFECKGCCFPPLTDNNTPTKHAIVQTLVHLQNPKKASKKACCVPT  
B29m      RKRSTGASSHCOKTSLRVNFDIGWDSWIIAPKDYAECKGGCFPLADDVTPTKHAIVQTLVHLKFPTKVGKACCVPT

400            . . . . .  
B29        KLDAAISILYKDDAGVPTLILYEGCMKVAECGGCR  
B29m      KLSPISILYKDDAGVPTLKHYEGMSVAECGGCR

433            . . . . .  
B29        401